

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



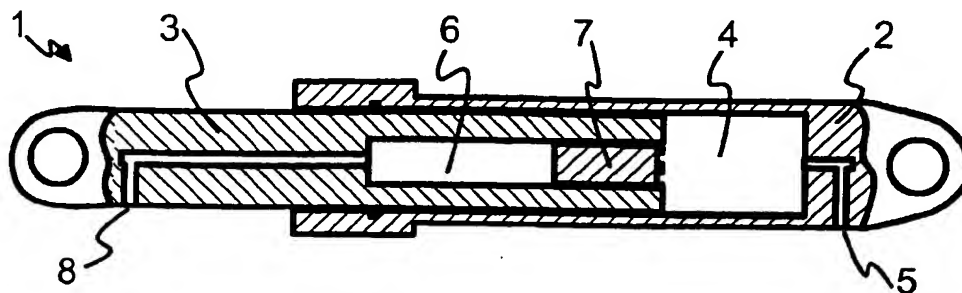
(43) International Publication Date
18 December 2003 (18.12.2003)

PCT

(10) International Publication Number
WO 03/104554 A1

- (51) International Patent Classification⁷: **D21G 1/00**
- (21) International Application Number: PCT/FI03/00452
- (22) International Filing Date: 9 June 2003 (09.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
U20020278 10 June 2002 (10.06.2002) FI
- (71) Applicant (for all designated States except US): **METSO PAPER, INC.** [FI/FI]; Fabianinkatu 9 A, FIN-00130 Helsinki (FI).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **HAAG, Jorma** [FI/FI]; Pikitie 12, FIN-03620 Karkkila (FI). **LAAKSONEN, Keijo** [FI/FI]; Sallisenkatu 6, FIN-05830 Hyvinkää (FI).
- (74) Agent: **TAMPEREEN PATENTTITOIMISTO OY**; Hermiankatu 12 B, FIN-33720 Tampere (FI).
- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RELIEF CYLINDER STRUCTURE OF A MULTINIP CALENDER



(57) **Abstract:** The invention relates to a relief cylinder structure (1) for guiding a roll in a multinip calender, said relief cylinder structure comprising at least a frame (2), an arm (3) that is arranged to move linearly in relation to the frame, a quick-opening cylinder (6) and a hydraulic coupling (5,8). The quick-opening cylinder (6) is placed inside the arm (3).

WO 03/104554 A1